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## (12) UK Patent Application (19) GB (11) 2 004 175 A

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 (33) DENMARK (DK)  
 (43) Application published:  
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(54) AN APPARATUS FOR  
 SEPARATING THE INTESTINE  
 AND THE GALL BLADDER  
 FROM THE LIVER AND THE  
 HEART OF SLAUGHTERED  
 POULTRY

(57) A chute is formed by two spaced

plates defining a slit (1) through which the intestines can pass while the liver and heart are held back on the upper side of the plates. The chute first steepens, then becomes less steep (2) and has an arcuate run-out (3) leading to a rotating cutter (4) which cuts the intestine and gall bladder from the liver and heart.

## ERRATA

SPECIFICATION NO 2004175A

Front page heading (23) for Claims filed *read* Claim filed

Page 1, line 120, for CLAIMS *read* CLAIM

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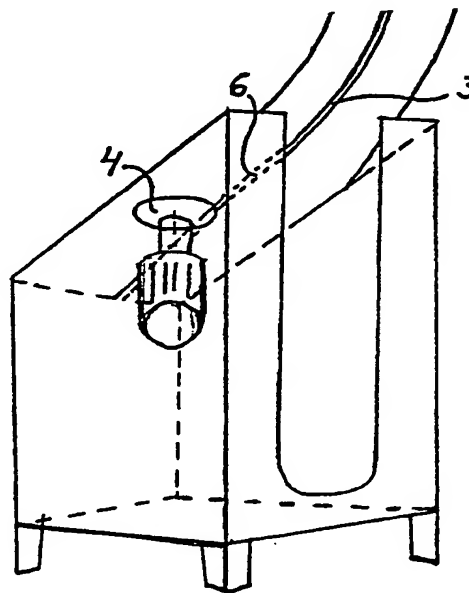


Fig. 1

GB 2 004 175 A

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GB 1415153  
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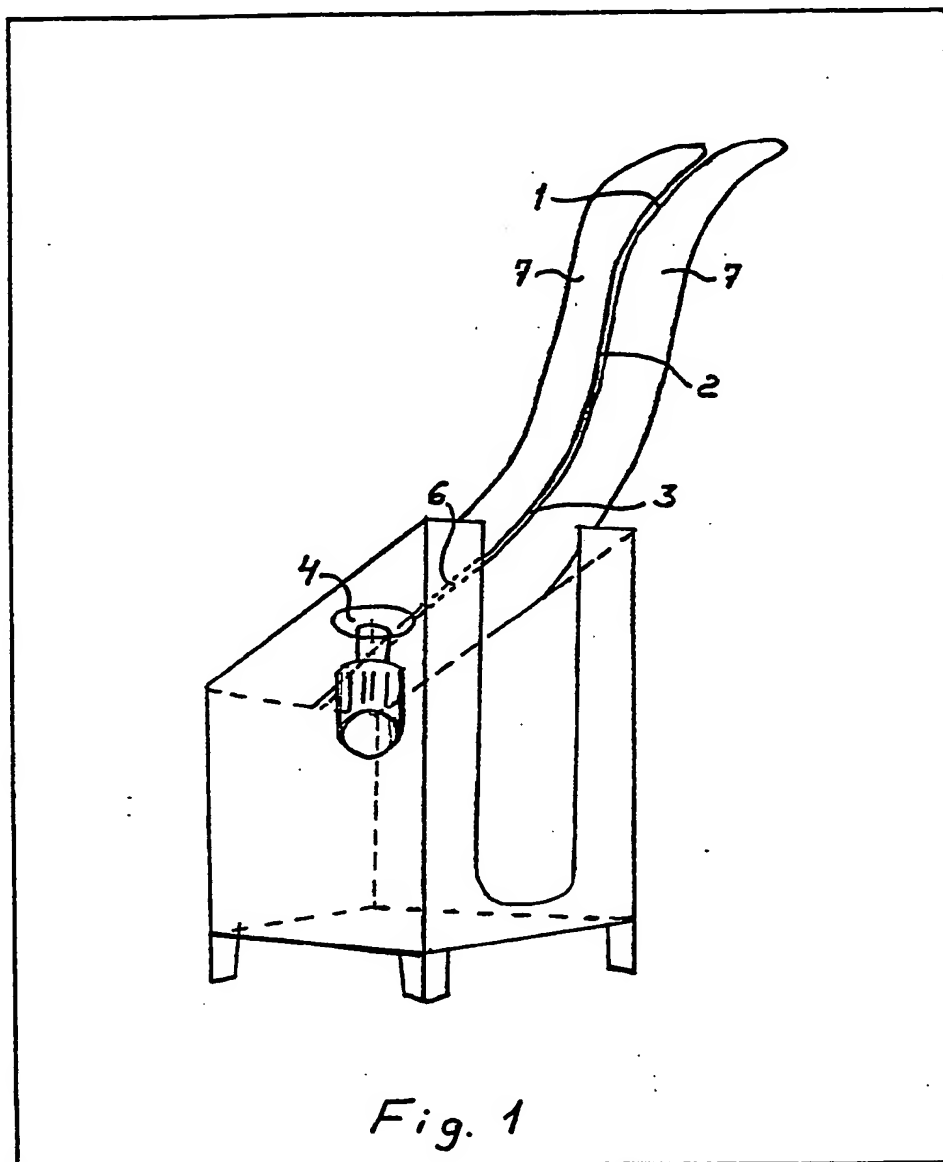
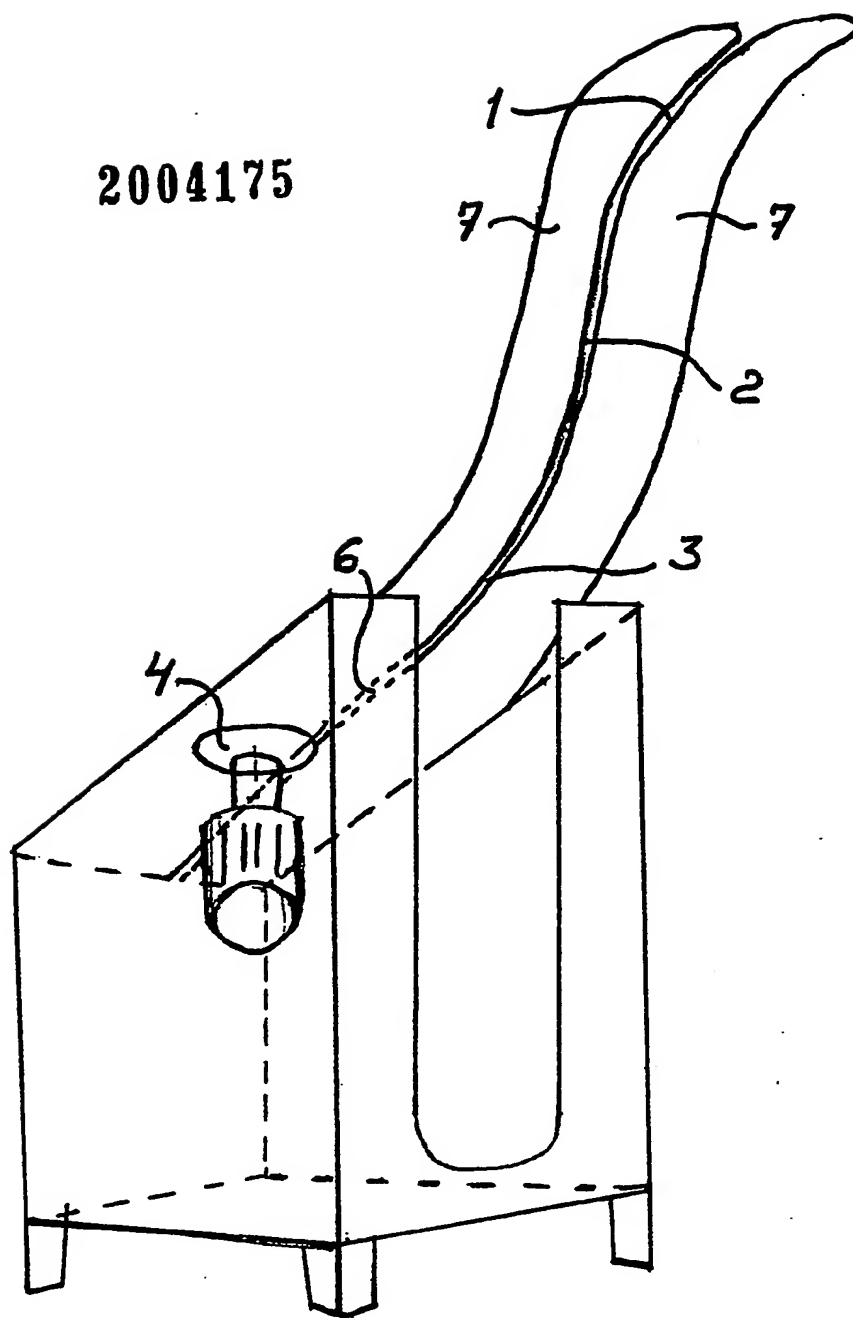


Fig. 1

GB 2 004 175 A

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*Fig. 1*

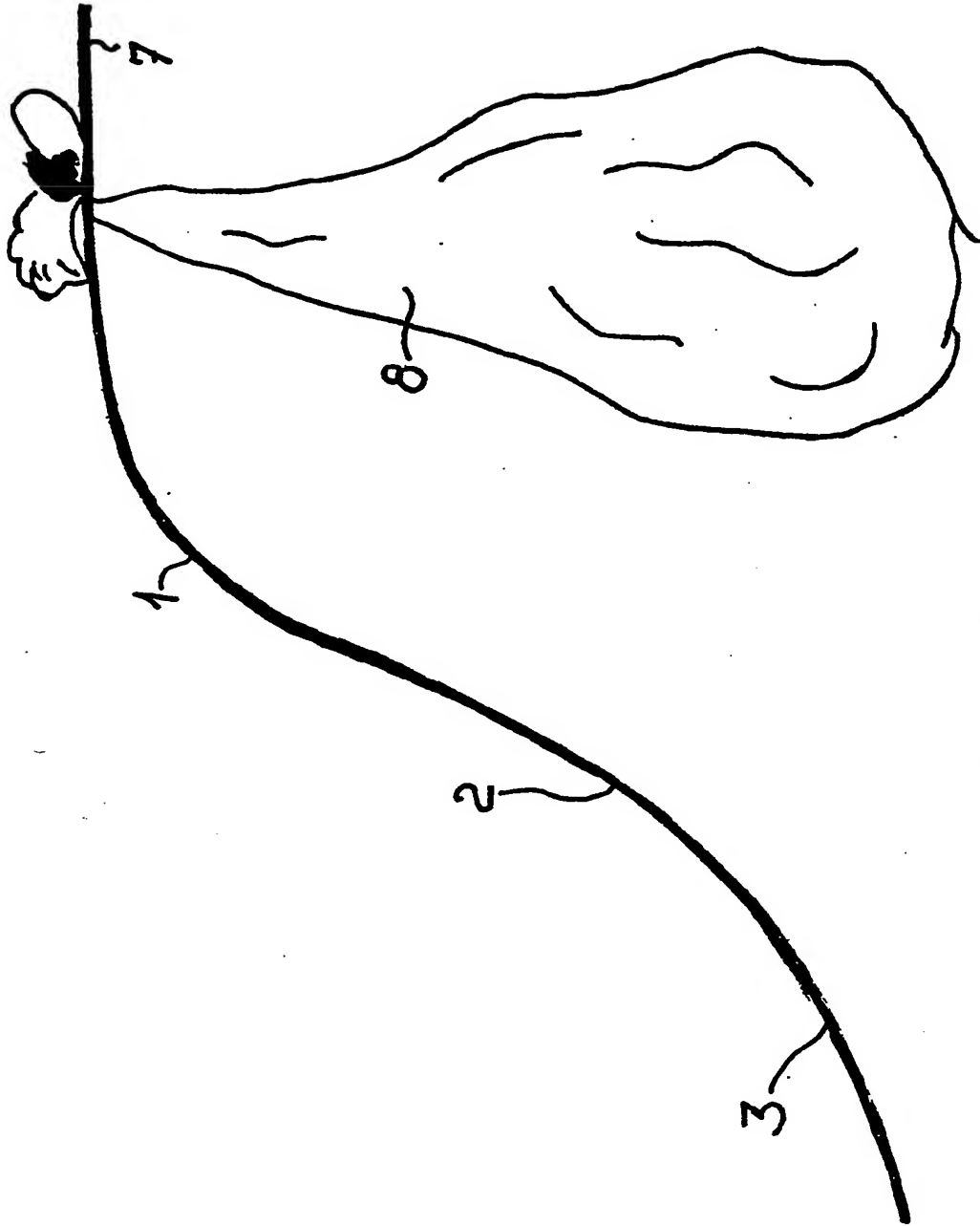
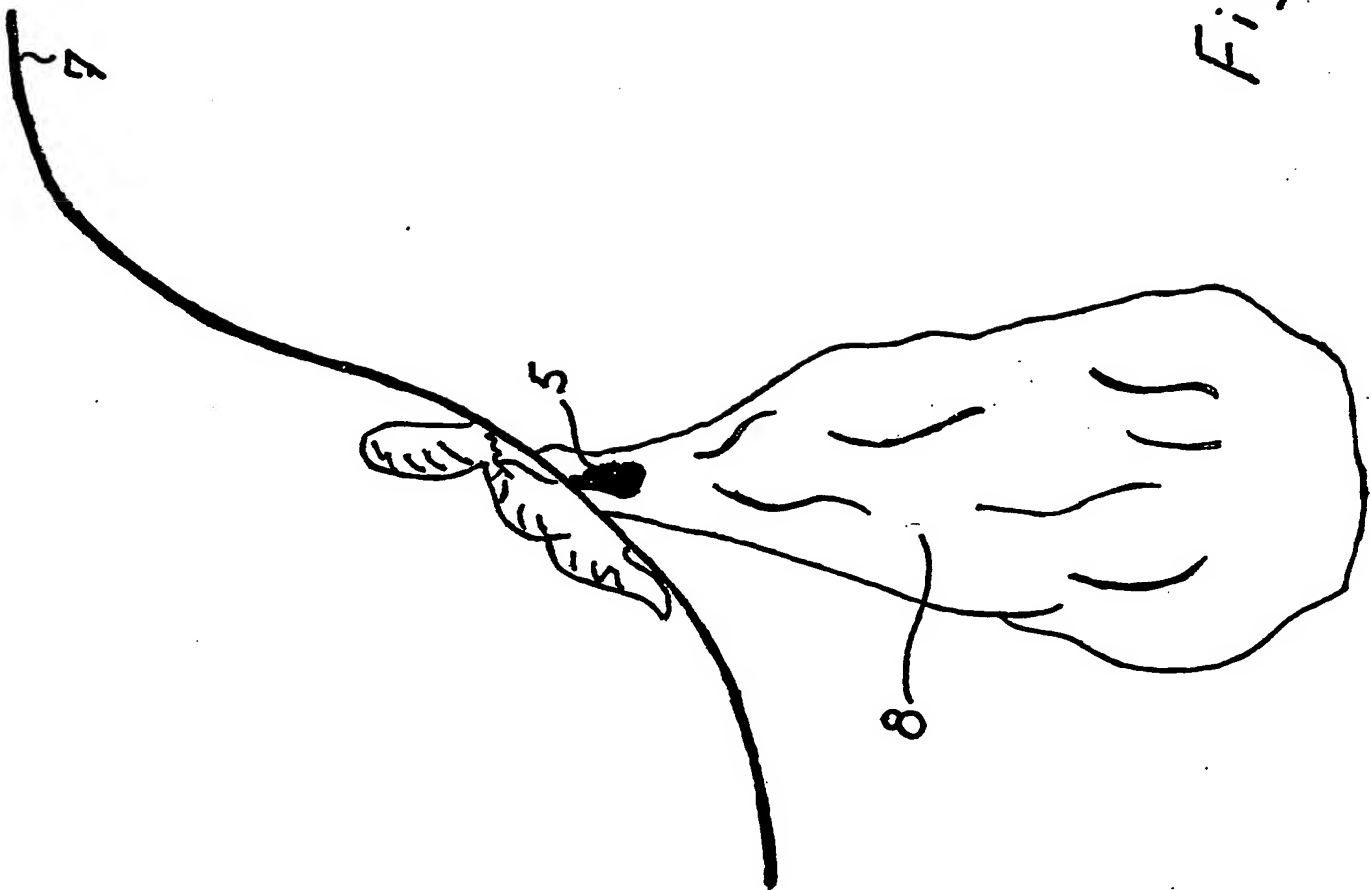


Fig. 2

Fig. 3



## SPECIFICATION

### AN APPARATUS FOR SEPARATING THE INTESTINE AND GALL BLADDER FROM THE LIVER AND THE HEART OF 5 SLAUGHTERED POULTRY

10 Slaughtering of chickens and other kinds of poultry is usually carried out by placing the live animals in a hanging position upon conveyor straps whereinafter said animals are carried on to anaesthetization, slaughtering, scalding and plucking.

15 Subsequently an incision is made in the abdomen of the animals to bring about an aperture through which the animals are drawn.

20 When the intestines comprising edible plucks such as liver, heart and gizzard after drawing are attached on the exterior of the animal either by intestinal connection with the crop or the oesophagus or by the connection between the gizzard and the abdomen skin veterinary inspection can be performed, whereinafter manual removal of the liver and heart from the gall bladder and the intestine is carried out. After the removal of liver and heart the intestines with gizzard are worked up in a so-called gizzard machine. In such a machine the gizzards are separated from the intestines, cut off and the contents of the gizzards are removed.

25 The removal of liver and heart is usually carried out as follows.

30 The intestines comprising liver and heart is torn off by hand from the animal. Liver and heart which are firmly fixed to the intestines as torn off are then torn off by hand from the intestines. The gall bladder which is firmly fixed to the underside of the liver and close to the connection with the intestines is torn off too.

35 It is well-known from time studies that the extension of work by such a manual removal of liver and heart can be divided into 1/3 for tearing off the intestines as such with liver and heart from the animal and 2/3 for the separation of liver and heart from the gall bladder and the intestines.

40 It is well-known too that by using the manual process above a certain percentage damage of the amount of liver torn off has to be accepted as well as a certain quantity of liver remains sticking to the intestines torn off and accordingly is thrown away as garbage. At the same time the manual separation of the gall bladder often results in that said gall bladder ruptures and that gall runs off on the edible parts which then have to be thrown away. Furthermore the fingers can be infected by the gall.

45 According to the present invention an apparatus is provided for separating liver and heart from gall bladder and intestine, said apparatus comprising a chute formed of two parallel separator plates mounted side by side and forming a slit of an adjusted width, through which the intestines can pass whereas the liver and the heart are kept back on the upper side of said separator plates, which separator plates forming

65 the chute are tilted at the entering end and after the tilted ramp-part said separator plates comprise a part provided with a smaller slope and connected with a part having a circular arc shape, whereby a rotating cutter is provided at the lower end of said chute below and close to said separator plates.

70 The object of the present invention is to reduce the manual work in the removal of liver and heart from intestines and furthermore to reduce the loss and the damage of the liver. Furthermore the apparatus according to the present invention leads to avoidance of rupture of gall bladders which is a problem connected with the manual separation resulting in discarding of poultry and infection.

75 The invention will now be described in more detail, by way of example, with reference to the drawing, in which:

80 Fig. 1 shows the apparatus according to the present invention seen from below and sideways and showing the lower edge of the separator plate and the placing of the rotating cutter,

85 Fig. 2 shows the elaboration of the separator plates and the putting on of intestines,

90 Fig. 3 shows how the intestines during the passing down on the separator plates draw the gall bladder through the slit and under the chute.

As will appear from the drawing when using the apparatus according to the present invention the liver and heart together with the intestines are inserted into a slit 1 with the intestines hanging loose through and below said slit 1 and the liver and heart being placed above. The width of said slit 1 is adjusted in such a way that the intestines will fall through said slit 1, whereas the liver and the heart will remain on the upper side of the separator plates and when the liver and the heart together with the intestines slide down the chute and pass the second part 2 of the chute and further on the loose intestines will draw the liver and the heart tightly to the upper side of the separator plates as a result of the separator plates circular arc part 3 or change of direction. Besides obtaining that the junction between the liver-heart is fixed in the slit it is obtained too that the gall bladder will be pulled down through the slit 5 at the same time the liver and the heart with intestines slide on upon the separator plates down to a rotating cutter 4 which is placed below and close to the separator plates.

105 Furthermore when the liver and heart with the intestines slide down along the slit the part of the intestines which at the insertion may be placed above the separator plates spontaneously will fall through the slit as a result of the sliding motion.

## 120 CLAIMS

1. An apparatus for separating liver and heart from gall bladder and intestines, said apparatus comprising a chute formed of two parallel separator plates mounted side by side and forming a slit of an adjusted width, through which the intestines can pass whereas the liver and the heart are kept back on the upper side of said separator

plates, which separator plates forming the chute are tilted at the entering end and after the tilted ramp part said separator plates comprise a part provided with a smaller slope and connected with

5 a part having a circular arc shape, whereby a rotating cutter is provided at the lower end of said chute below and close to said separator plates.

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